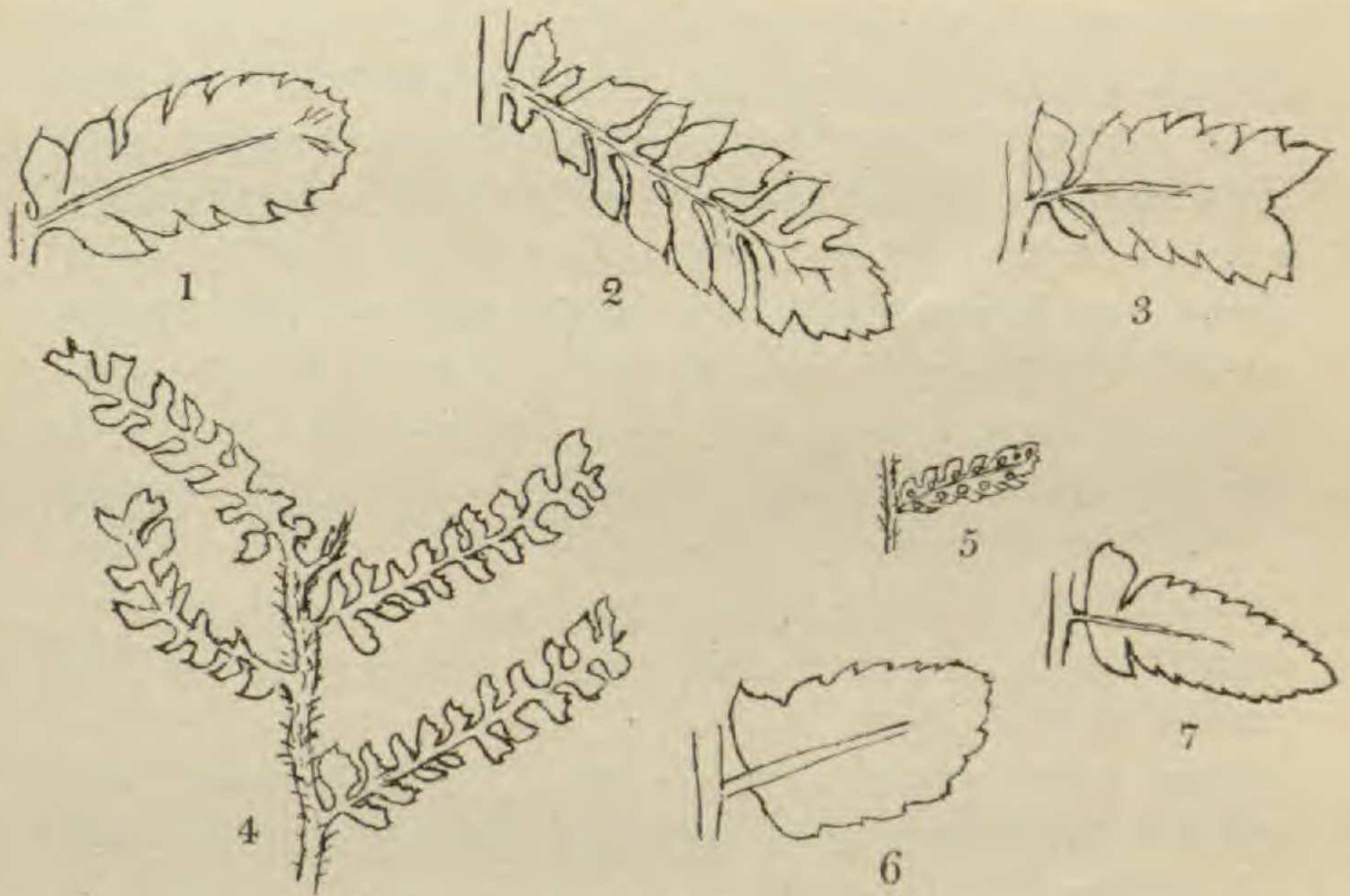


feature, confirming the first impression. The tendency to bifurcate, noted above, had in one instance gone so far as to produce a forked frond. The figures given show the chief characteristics. They are about natural size.



EXPLANATION OF FIGURES

1. Middle pinna of a sterile frond.
2. Lower pinna of a fertile frond.
3. Middle pinna of a fertile frond.
4. End of a fertile frond.
5. Reverse of a fertile pinna, showing position of sori.
- 6 and 7. Pinnæ from sterile fronds.

A Great Day.

GEO. L. MOXLEY

On May 30th of this present year Prof. T. J. Fitzpatrick and I set out on a botanical exploring expedition into a range of hills not far to the north of Los Angeles, Cal. While our quest was primarily for ferns,

we were ready to note and collect anything of interest.

We climbed a ridge above Eagle Rock and followed a trail which allowed us a view of both slopes as we traveled. It was very interesting to note the influence of the slope upon the ecology of the range, north and north-east slopes having usually a much heavier and greener growth of chaparral than the south and south-west slopes. The growth on the dry sunny slopes consists largely of *Lotus glaber* (Torr.) Greene and *Pentstemon spectabilis* Thurb., which latter occurred in such dense patches as to give a purple hue to quite large areas. On the more shaded slopes *Adenostoma fasciculatum* H. & A., one or two species of scrub oaks, and the black and white sages formed the prevailing cover.

As Prof. Fitzpatrick is recently here from the East, the whole flora of the range was of great interest to him, but I was intent on finding ferns. After going up hill and down for about five hours, with frequent stops to gather some plant of more than usual interest, we spied a likely looking canyon and cast about for a way of getting down into it. As there seemed to be no trail we broke our way through the brush and soon arrived at the bottom. The canyon was deep and narrow where we entered it, and densely filled with brush which at the bottom was bound together with trailing vines of *Rubus* sp. and *Rhus diversiloba* T. & G.

On arriving at the bottom of the canyon we at once found some beautiful fronds of *Nephrodium rigidum* var. *argutum*, but they were sterile. However, we later found plenty which were in fine fruit. At this place we also found some of our beautiful gold back fern, *Gymnogramma triangularis* Kaulf. From this point travel became exceedingly difficult. At times we had to crawl under the brush and vines in the V-shaped bottom of the ravine, for at this place it was hardly more, and at other times we had to climb up the side

and clamber over the top of the brush or break our way through. We felt like veritable explorers making our way through an entirely new country.

As we worked our way down the ravine we suddenly came upon a bank on which grew a great quantity of *Adiantum Jordani* C. Muel., interspersed with *Polypodium Californicum* Kaulf. A little further down we found some large clumps of *Woodwardia radicans* (L) Sm., some of last year's fronds, six feet or more in height, still remaining and showing its characteristic fruiting, but the new fronds not fully uncoiled.

We were now quite jubilant and ready to vote our trip a great success, but it seemed to be only a beginning, for we soon discovered *Pellaea andromedaefolia* (Kaulf.) Fee., *P. ornithopus* Hook. and another that may be only an immature form of *andromedaefolia*, though it was in full fruit. But I find that *P. andromedaefolia* is quite diverse in its growth, being bi- tri- or quadripinnate, and the ultimate pinnules on some plants being less than half the size of others. I think the tendency is for them to become more times pinnate as the plants grow older. I hope to clear up this point by watching individual plants in my wild garden.

Farther down the canyon we found a quite large area densely covered with tall, waving fronds of *Pteris aquilina* L. with some more clumps of *Woodwardia radicans*, and a little farther the bracken was interspersed with *Equisetum robustum* A. Br.

It was now getting late and we had not yet reached the mouth of our canyon so we began to hurry along, but we just couldn't get away without finding one more fern, for on a little bank we found two or three plants of *Cheilanthes Californica* (Nutt) Mett. We were now rich indeed. Our Southern California fern flora is not very large at best, and here in one afternoon in one little

canyon we had found nine, or perhaps ten, species of ferns, an *Equisetum* and a *Selaginella*.

Just at dusk, as we were coming out of our little canyon into a larger one, we found a *Habenaria* and a broom rape (probably *Orobanche tuberosa* (Gray, Heller.), and a little later, when it was almost too dark to see, Prof. Fitzpatrick caught sight of another *Habenaria*. Orchids are not plentiful around here so we felt peculiarly favored. It was now nearly dark and we were still a long way from home, but we were agreed that though tired we had spent a great and profitable day.

LOS ANGELES, CAL., JUNE 16th, 1913.

Double Sori in *Athyrium*

E. J. WINSLOW

Three years ago, while the author was collecting in northern Vermont and amusing himself by making a rather minute examination and comparison of the three species of our New England ferns that are sometimes called *Athyrium*, fronds were collected from several widely separate plants of a narrow, erect variety of *A. filix-femina*, which generally bears double sori on the outer part of the pinnae where the veining becomes more simple. This seemed interesting as an unusual and perhaps unrecorded peculiarity of structure, and because it raises some interesting questions regarding the relations and classification of the three species under consideration.

Figure 1 is an essentially accurate sketch of a small portion of one of the fronds showing the outline of three pinules and one pair of sori on each; the pair to the left on the two branches of a forked vein, the next pair on a